Response to Comments
Hartman Fire Salvage Project
Tamarack Chimney Fire Salvage Project

John Muir Project, October 4, 2021:

1. *"At least an EA, or an EIS, must be prepared. Using two CEs in the North fire complex is illegal segmentation of analysis under NEPA, which undermines cumulative effects analysis."*

   1. The North Complex Fire began with a series of lightning strikes August 17, 2020. The Claremont Fire and Bear Fire located on the Plumas National Forest merged and on September 8, 2020 spotted across the Middle Fork Feather River and traveled some 30 miles that day. The complex burned an estimated 318,935 acres (approximately 201,113 acres NFS lands) and was 100% contained on December 3.

   The Forest Service has proposed several projects to harvest damaged timber, remove hazard trees within striking distance of some roads, trails, recreation infrastructure, and people and property located in the nearby wildland urban interface (WUI), to remove hazardous fuels created by the fire, and reforestation and restoration activities.

   The Forest Service has determined that a proposed action may be categorically excluded from further analysis and documentation in an EIS or EA if the proposed action is within a category listed in 36 CFR 220.6(d) or (e). These small projects, within the district's capacity and at high priority areas, collectively address 2% of the NFS lands burned in the Bear and Claremont Fires. In accordance with Agency procedures, we evaluate each action for extraordinary circumstances in which a normally excluded action may have a significant effect.

   In response to record wildfires experienced in 2020 and 2021, the Plumas National Forest is participating in the Pacific Southwest Region (R5) Post Disturbance Hazardous Tree Management Project Environmental Assessment that will perform zone level analysis of environmental effects, ensure consistency with Forest Plans, and provide any additional project constraints and cumulative effects analysis for the need to reduce public safety hazards along roads, trails, and facilities and reduce fuel loading adjacent to portions of roads, trails, and facilities across zone scales.

   This is evidence that the Forest Service did not segment projects to avoid mandatory documentation but rather, identified projects based on safety, priority, access, time sensitive issues, location, terrain, and unit capacity.

2. *"There are highly controversial effects and unknown risks of these projects, including adverse impacts to spotted owls (see Hanson et al. 2018, Lee 2020, and Hanson et al. 2021, attached), black-backed woodpeckers (see Hanson and Chi 2020, attached), and increased subsequent fire intensity resulting from post-fire logging and artificial planting (Donato et al. 2006, Thompson et al. 2007, Hanson 2021 in review--see attached)."*

   2.A. <u>California spotted owl</u>. We reviewed the articles provided regarding effects of post-fire logging on California spotted owl. The studies are not applicable to either the Hartman Fire Salvage or Tamarack Chimney Fire Salvage projects. These PACs (and much of the surrounding area) burned at greater than 90% basal area mortality (high vegetation burn severity is 75%-100%). Over 80% of the area within a 1500-meter radius of the historical activity center (PLU0141) located at Hartman Fire Salvage burned at > 90% BA mortality. One hundred percent of the area within a 1500-meter radius of the historical activity center (PLU0024) located at Tamarack Chimney Fire Salvage burned at > 90% BA mortality. Hanson et al. (2018) did not analyze post-fire logging for sites with > 80% high vegetation burn severity. However, the percentage of post-fire logging proposed within the two 1500-meter radius areas are <3% for Hartman Fire Salvage and <4% for Tamarack Chimney Fire Salvage. Although our proposals are below the 5% threshold identified by Hanson et al. (2018), their meta-analysis of published studies regarding mixed-severity fire effects on spotted owls does not address these high vegetation burn severity results. Roughly 57% of the Bear Fire burned at high vegetation burn severity.

2.B. Black-backed woodpecker. The sum of these projects proposes treating about 0.4% of the approximately 115,000 acres of NFS lands that burned at high vegetation burn severity in this fire.

2.C. Increased fire intensity. Although PSW-GTR-270, Postfire restoration framework for National Forests in California, has only been published since February of this year, we have worked and collaborated with contributors and with other research foresters and ecologists on post-fire projects involving the Camp Fire and now the Bear Fire of the North Complex. These interactions and the science on which the GTR is based informed our North Complex rapid assessment and subsequent prioritization of activities. Preliminary analysis using RAVG shows that over 100,000 acres of forestland was deforested by the North Complex Fire. Natural regeneration may be expected on some acres, but artificial regeneration (planting) will likely be needed as well. Meanwhile we are also documenting areas where fire improved ecological conditions.

We continue to work with researchers and to develop reforestation plans that explore and incorporate concepts, guidance, and findings that move us towards desirable future structure for reforestation efforts. Derek Young, research ecologist, UC Davis, proposes to study early post-fire forest dynamics (e.g. seedling establishment, fire injury to trees, and delayed mortality) to determine whether accounting for initial post-fire conditions can better explain regeneration patterns and therefore improve models for predicting post-fire regeneration, and serve as a baseline for repeat surveys of the same plots in future years, to understand how well initial recovery patterns relate to longer-term recovery success. Morris C. Johnson, research fire ecologist, Pacific Northwest Research Station, is establishing a network of permanent monitoring plots to quantify short- and long-term effects of variable density retention salvage logging on forest structure, fuel succession, and wildfire behavior.

Coppoletta (2020) applied a spatially explicit model developed by Shive et al. (2018) to produce a five-year post-fire predictive map of potential conifer regeneration following the 2020 Claremont-Bear Fire on the Plumas National Forest. Merriam (2021) used spatial data compiled by Thorne et al. (2020) to identify vegetation refugia. These are areas where vegetation occurring prior to the North Complex Fire is expected to persist under future projected climates.

3. *“The scoping notices for both Hartman and Tamarack mischaracterize the Coppoletta et al. (2016) study. That study shows that areas which burn at high-severity typically reburn at overall *lower* levels of severity, with mostly low/moderate-severity effects in reburns. See, e.g., Figure 3 of Coppoletta et al. (showing 21% high-severity fire in initial burn and only 9% high-severity in reburn) and Figure 6.”*

   In their study, Coppoletta et al. (2016) clearly state that “high- to moderate-severity fire in the initial fires led to an increase in standing snags and shrub vegetation, which in combination with severe fire weather promoted high-severity fire effects in the subsequent reburn.” Their analysis of fire severity patterns documented a significant positive relationship between initial severity and reburn severity after a relatively short period of time following the initial fire (displayed in Figure 6). They note “in older fires (e.g., those that burned more than 9 years prior to data collection), plots that initially burned at higher severities tended to reburn at higher severities, whereas areas that initially burned at lower severities generally reburned at lower severities (Table 3, Fig. 6).” This clear link between high severity fire in an initial fire and high severity fire in a subsequent reburn has also been documented in subsequent studies (e.g., Steel et al. 2021, Lydersen et al. 2019).

Coppoletta, M. 2020. Conifer regeneration potential in the 2020 Claremont-Bear Fire (Plumas National Forest). USDA Forest Service, Sierra Cascade Province Ecology Program, Region 5.

Lydersen, J.M., B.M. Collins, M. Coppoletta, M.R. Jaffe, H. Northrop, and S.L. Stephens. 2019. Fuel dynamics and reburn severity following high severity fire in a Sierra Nevada mixed-conifer forest. Fire Ecology. 15 (43) https://link.springer.com/article/10.1186/s42408-019-0060-x

Merriam, K. 2021. North Complex climate analysis. USDA Forest Service, Sierra Cascade Province Ecology Program, Region 5.

Shive, K. L., H. K. Preisler, K. R. Welch, H. D. Safford, R. J. Butz, K. O'Hara, and S. L. Stephens 2018. From the stand scale to the landscape scale: predicting the spatial patterns of forest regeneration after disturbance. Ecological Applications 28: 1626-1639.

Steel, Z., D. Foster, M. Coppoletta, J. Lydersen, S. Stephens, A. Paudel, S. Markwith, K. Merriam, B.M. Collins 2021. Ecological resilience and vegetation transition in the face of two successive large wildfires. Journal of Ecology. https://doi.org/10.1111/1365-2745.13764

Thorne, J. H., M. Gogol- Prokurat, S. Hill, D. Walsh, R. M. Boynton, and H. Choe. 2020. Vegetation refugia can inform climate- adaptive land management under global warming. Frontiers in Ecology and the Environment 18:281-287.